

OPTICAL ROUTING USING A STAR SWITCHING FABRIC

ABSTRACT

In one embodiment, a router includes a plurality of line cards each operable to receive at least one packet comprising an identifier associated with a destination element external to the router. Each line card includes a look-up table operable to facilitate routing the received packet toward the destination element based at least in part on the identifier. The router further includes a plurality of optical transmitters each associated with one of the line cards and operable to generate at a specified wavelength an optical router signal comprising at least a portion of the packet received by the line card associated with that optical transmitter. The router also includes a star switching fabric operable to receive a plurality of optical router signals from the plurality of optical transmitters and to communicate to each of a plurality of tunable filters a substantially similar set of at least some of the plurality of optical router signals. Each of the plurality of tunable filters is operable to selectively tune to a wavelength of one of the plurality of optical router signals to facilitate communication of the packet associated with that optical router signal toward the destination element.